

IN THE CLAIMS:

Please cancel claims 12-14, 16-30 and 56-99. Claims 1-11, 15 and 31-55 have been cancelled by previous amendment. Please add new claims 100-130 as follows.

Claims 1-99 (cancelled).

100. (new) A method of treating irritable bowel syndrome comprising:
detecting the presence of small intestinal bacterial overgrowth in a human subject having at least one symptom associated with a suspected diagnosis of irritable bowel syndrome; and
at least partially eradicating the small intestinal bacterial overgrowth to treat the irritable bowel syndrome.
101. (new) The method of claim 100, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering an antimicrobial agent.
102. (new) The method of claim 100, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering an antibiotic.
103. (new) The method of claim 101, wherein the antimicrobial agent is selected from the group consisting of neomycin, metronidazole, teicoplanin, ciprofloxacin, doxycycline, tetracycline, augmentin, cephalexin, penicillin, ampicillin, kanamycin, rifamycin, vancomycin, rifaximin, and combinations thereof.
104. (new) The method of claim 102, wherein the antibiotic is rifaximin.
105. (new) The method of claim 100, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering a probiotic agent.

106. (new) The method of claim 105, wherein the probiotic agent is at least one species or strain of bacterium selected from the group consisting of *Bifidobacterium*, *Lactobacillus* and combinations thereof.
107. (new) The method of claim 100, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering a prokinetic agent.
108. (new) The method of claim 107, wherein the prokinetic agent is selected from the group consisting of a peptide, motilin, a macrolide compound, a bile acid, a bile salt, a cholinergic compound, a dopamine antagonist, a nitric oxide altering agent, a 5-HT receptor antagonist, a neuroleptic agent, a kappa agonist, an antihistamine, cisapride, metoclopramide, domperidone, bethanechol, erythromycin, azithromycin, nomega-nitro-L-arginine methylester, N-monomethyl-L-arginine, ondansetron, alosetron, promethazine, meclizine, prochlorperazine, chlorpromazine, haloperidol, fedotozine and combinations thereof.
109. (new) The method of claim 107, wherein the prokinetic agent is motilin or a functional analog of motilin.
110. (new) A method of treating fibromyalgia comprising:
 - detecting the presence of small intestinal bacterial overgrowth in a human subject having at least one symptom associated with a suspected diagnosis of fibromyalgia; and
 - at least partially eradicating the small intestinal bacterial overgrowth to treat the fibromyalgia.
111. (new) The method of claim 110, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering an antimicrobial agent.
112. (new) The method of claim 110 wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering an antibiotic.

113. (new) The method of claim 111, wherein the antimicrobial agent is selected from the group consisting of neomycin, metronidazole, teicoplanin, ciprofloxacin, doxycycline, tetracycline, augmentin, cephalixin, penicillin, ampicillin, kanamycin, rifamycin, vancomycin, rifaximin, and combinations thereof.
114. (new) The method of claim 112, wherein the antibiotic is rifaximin.
115. (new) The method of claim 110, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering a probiotic agent.
116. (new) The method of claim 115, wherein the probiotic agent is at least one species or strain of bacterium selected from the group consisting of *Bifidobacterium*, *Lactobacillus* and combinations thereof.
117. (new) The method of claim 110, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering a prokinetic agent.
118. (new) The method of claim 117, wherein the prokinetic agent is selected from the group consisting of a peptide, motilin, a macrolide compound, a bile acid, a bile salt, a cholinergic compound, a dopamine antagonist, a nitric oxide altering agent, a 5-HT receptor antagonist, a neuroleptic agent, a kappa agonist, an antihistamine, cisapride, metoclopramide, domperidone, bethanechol, erythromycin, azithromycin, nomega-nitro-L-arginine methylester, N-monomethyl-L-arginine, ondansetron, alosetron, promethazine, meclizine, prochlorperazine, chlorpromazine, haloperidol, fedotozine and combinations thereof.
119. (new) The method of claim 117, wherein the prokinetic agent is motilin or a functional analog of motilin.

120. (new) A method of treating Crohn's disease comprising:
 - detecting the presence of small intestinal bacterial overgrowth in a human subject having at least one symptom associated with a suspected diagnosis of Crohn's disease; and
 - at least partially eradicating the small intestinal bacterial overgrowth to treat the Crohn's disease.
121. (new) The method of claim 120, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering an antimicrobial agent.
122. (new) The method of claim 120, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering an antibiotic.
123. (new) The method of claim 121, wherein the antimicrobial agent is selected from the group consisting of neomycin, metronidazole, teicoplanin, ciprofloxacin, doxycycline, tetracycline, augmentin, cephalixin, penicillin, ampicillin, kanamycin, rifamycin, vancomycin, rifaximin, and combinations thereof.
124. (new) The method of claim 122, wherein the antibiotic is rifaximin.
125. (new) The method of claim 120, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering a probiotic agent.
126. (new) The method of claim 125, wherein the probiotic agent is at least one species or strain of bacterium selected from the group consisting of *Bifidobacterium*, *Lactobacillus* and combinations thereof.
127. (new) The method of claim 120, wherein at least partially eradicating the small intestinal bacterial overgrowth further comprises administering a prokinetic agent.

128. (new) The method of claim 127, wherein the prokinetic agent is selected from the group consisting of a peptide, motilin, a macrolide compound, a bile acid, a bile salt, a cholinergic compound, a dopamine antagonist, a nitric oxide altering agent, a 5-HT receptor antagonist, a neuroleptic agent, a kappa agonist, an antihistamine, cisapride, metoclopramide, domperidone, bethanechol, erythromycin, azithromycin, nomega-nitro-L-arginine methylester, N-monomethyl-L-arginine, ondansetron, alosetron, promethazine, meclizine, prochlorperazine, chlorpromazine, haloperidol, fedotozine and combinations thereof.
129. (new) The method of claim 127, wherein the prokinetic agent is motilin or a functional analog of motilin.
130. (new) A method of treating a condition modulated by small intestinal bacterial overgrowth comprising:
- detecting the presence of small intestinal bacterial overgrowth in a human subject having at least one symptom associated with a suspected diagnosis of the condition; and
 - at least partially eradicating the small intestinal bacterial overgrowth to treat the condition,
- wherein the condition is selected from the group consisting of chronic fatigue syndrome, depression, attention deficit/hyperactivity disorder and multiple sclerosis.